

LONDON- WEST MIDLANDS ENVIRONMENTAL STATEMENT

Volume 5 | Technical Appendices

CFA4 | Kilburn (Brent) to Old Oak Common

Data appendix (LQ-001-004)

Land quality

November 2013

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Department
for Transport

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1 Introduction

- 1.1.1 The land quality appendix for the Kilburn (Brent) to Old Oak Common community forum area (CFA₄) comprises:
- a summary of engagement undertaken (Section 2);
 - detailed risk assessment (Section 3);
 - inspection notes and other site data (Section 4);
 - geological sites of special scientific interest (SSSI) or regionally important geological sites (RIGS) (Section 5); and
 - mining and minerals data (Section 6).
- 1.1.2 Maps referred to throughout the land quality appendix are contained in Maps LQ-01-004 LQ-01-004-L1 and LQ-01-005 in Volume 5, Land Quality Map Book.

2 Engagement

- 2.1.1 Table 1 sets out the local authorities and other organisations that have been engaged with during the preparation of the land quality section of the environmental impact assessment (EIA) for this study area, the types of information that have been provided to the assessment team and any specific concerns of those with whom the team engaged.

Table 1: Engagement on land quality issues undertaken for the study area

Local authority or other organisation	Method/dates of contact	Information provided and/or specific concerns
Environment Agency	Contact via email on: 24 April 2013; 15 May 2013; 24 May 2013; 12 June 2013; 14 June 2013; 27 June 2013; and 08 June 2013.	None received for this particular area.
Royal Borough of Kensington and Chelsea (RBKC)	Contact via email on: 08 October 2012; 31 October 2012; and 06 November 2012.	Based on the initial contact email, RBKC produced an environmental information report with associated mapping. The report stated that no land within the search area has been determined as Contaminated Land under Part IIA ¹ of the Environmental Protection Act 1990. The RBKC has not served any remediation notices to date. The report detailed potentially contaminative land uses present within the search area which included a cemetery, the Kensal Green Gasworks, underground storage tanks, railway and an engineering works/smithy which have also been identified for further investigation under Part IIA. The report detailed that an investigation and remedial works took place at Kensal Green Gasworks during 2002/2003 and results of this indicated that there are some areas of this site where contamination is still present. In addition, the report detailed a number of site investigations which relate to the search area provided. The report also provided information on the presence of radioactive substances, pollution incidences, source protection zones, Part B processes (under the Environmental Permitting (England and Wales) Regulations 2010) and landfill sites. An additional request related to whether the council held any details of unexploded ordnance (UXO) records was also submitted separately. The council responded that they did have evidence of two unexploded bombs in the borough (none within the search area). However as the source of this could not be referenced they could not place any reliability on the information.
	Contact via telephone on: 16 November 2012.	Telephone conversation between the project team and RBKC to make an appointment to visit the council offices and look over the site investigation reports held which were detailed within the search report.

¹ Environmental Protection Act 1990, Part IIA, Introduced in England on 1 April 2000, London, Her Majesty's Stationary Office.

Local authority or other organisation	Method/dates of contact	Information provided and/or specific concerns
	Face to face meeting on: 27 November 2012.	Meeting held at the council offices to review site investigation reports. Reports identified superficial contamination only – London Clay underlying the sites prevented downward migration of contaminants.
London Borough of Hammersmith and Fulham (LBHF)	Contact via email on: 08 October 2012; 31 October 2012; 05 November 2012; 08 November 2012; 23 January 2013; and 22 February 2013.	LBHF provided an environmental search report detailing historical activities based within the Old Oak Common area and any records related to land contamination, in addition to information related to groundwater abstraction and UXO records.
London Borough of Ealing (LBE)	Contact via email on: 31 October 2012; 17 December 2012; and 23 January 2013.	Nothing received other than a response to the reminder email sent out on the 17 December 2012 which stated that the request would be looked into. No response to email dated 23 January 2013.
London Borough of Brent (LBB)	Contact via email on: 31 October 2012; 01 November 2012; 05 December 2012; 21 February 2013; and 22 February 2013. Contact via telephone on: 14 November 2012.	From the initial contact email sent out with the details of the search request, LBB requested clarification on the scope of search. Clarification was given in a subsequent telephone conversation. It was discussed that the sites in the assessment area within the borough did not give cause for concern if they remained in their current low sensitivity use (i.e. not developed for housing or parks). The LBB advised that it was likely that the 'typical' contamination was expected of former industrial sites in the borough (i.e. contamination with heavy metals and metalloids, hydrocarbons and polycyclic aromatic hydrocarbons (PAH) including benzo(a)pyrene). It was agreed to submit a revised and reduced search area. This was sent on the 21 February 2013. A response was received which confirmed that there were no sites within the borough that are, or in the process of being, determined to be Contaminated Land under Part IIA of the Environmental Protection Act 1990. A response based on the revised search area provided on the 21/02/2013 detailed that Area 1 (Alpertown) is identified under the Contaminated Land Inspection Strategy as having potentially contaminative historic uses and that the area is a low priority for inspection by the council. In relation to Area 2 (Park Royal) this area is also identified under the Contaminated Land Inspection Strategy as having potentially contaminative historic uses and that the area is currently a low priority for inspection by the council. In addition it was confirmed that the eastern half of the site was once occupied by the Guinness Brewery and has been remediated to a level suitable for industrial/commercial use. Within Area 3 (Kensal Green) a number of areas have been identified under the Contaminated Land Inspection Strategy, situated on Salusbury Road, Albert Road and Kilburn Lane.
London Fire Brigade (LFB)	Contact via email on: 12 June 2012.	Contact was made by email initially, followed by telephone conversation with LFB regarding several sites that had been identified as having potential petroleum storage facilities within their boundaries. A petroleum storage facility enquiry was directed to the LFB for the following

Local authority or other organisation	Method/dates of contact	Information provided and/or specific concerns
		<p>seven sites:</p> <ul style="list-style-type: none"> - 98 Victoria Road, London, NW10 6NB; - Quattro, Victoria Road, London, NW10 6NG; - J.P. Boden and Co, 114-120 Victoria Road, NW10 6NY; - Geo.W.Neale Ltd, Victoria Road, London, NW10 6NG; - Reston Waste Management Ltd, Willesden Freight Terminal, Channel Gate Road, London, NW10 6UQ; - North Pole Depot, Scrubs Lane, London, NW10 6QE; and - Makro Superstore, Atlas Road, North Acton, NW10 6DD. <p>Of the seven sites identified, the LFB had no records of petroleum storage on-site for six of them.</p> <p>Records indicate the Makro Superstore site had two former 50,000 litre petroleum tanks on site which have since been foam filled and decommissioned.</p>

3 Detailed risk assessment

3.1.1 This section presents assessments for the higher risk potentially contaminated sites within the study area. For each site the following data are presented:

- baseline risk assessment;
- construction risk assessment;
- post-construction risk assessment; and
- assessment of temporary (construction) and permanent (post-construction) effects.

3.1.2 This risk assessment incorporates the following assumptions:

- construction workers are not included within this assessment;
- sites that have been assessed as potentially posing a contaminative risk to the Proposed Scheme have been grouped and considered together where appropriate. It should be noted that some parcels of land may have had several land uses from different epochs;
- during construction standard mitigation procedures will be in place in accordance with the Code of Construction Practice (CoCP) (Volume 5: Appendix CT-003-000); and
- during the post-construction condition it is assumed that all required remediation has been undertaken and carried out.

3.1.3 The sites assessed in this study area are set out in Table 2 and are shown on Maps LQ-01-004, LQ-01-004-L1 and LQ-01-005 (Volume 5, Land Quality Map Book).

Table 2: Detailed risk assessment for areas potentially posing a contaminative risk within the study area

Site reference	Land use	Table reference
4-248	Railway land over the existing Old Oak Common Sidings	3, 18, 33, 48
4-257	Railway land	4, 19, 34, 49
4-263	Railway land	4, 19, 34, 49
4-265	Railway land	4, 19, 34, 49
4-252	Railway land	4, 19, 34, 49
4-03	Railway land	5, 20, 35, 50
4-54	Railway land	5, 20, 35, 50
4-260	Railway land	5, 20, 35, 50
4-262	Railway land	5, 20, 35, 50
4-264	Railway land	5, 20, 35, 50

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4-121	Hogarth industrial estate	6, 21, 36, 51
4-139	Works	6, 21, 36, 51
4-124	Industrial estate	6, 21, 36, 51
4-143	Engineering works	6, 21, 36, 51
4-141	Warehouse	6, 21, 36, 51
4-145	Depots	6, 21, 36, 51
4-134	Depots	6, 21, 36, 51
4-133	Trading estate	6, 21, 36, 51
4-148	Industrial estate	7, 22, 37, 52
4-83	Biscuit warehouse	7, 22, 37, 52
4-149	Warehousing	7, 22, 37, 52
4-16	Garage	8, 23, 38, 53
4-61	Wharf	9, 24, 39, 54
4-77	Timber yard	9, 24, 39, 54
4-140	Works	9, 24, 39, 54
4-79	Paper works	9, 24, 39, 54
4-158	Unspecified works	9, 24, 39, 54
4-131	Unspecified factory	9, 24, 39, 54
4-53	General works area (engineering works/wharves)	10, 25, 40, 55
4-81	Timber wharf. Motor works subsequently	10, 25, 40, 55
4-147	Builders yard	10, 25, 40, 55
4-74	Brick/sillimanite works. Depots present subsequently	10, 25, 40, 55
4-55	Rubber depot	10, 25, 40, 55
4-59	Stone works	10, 25, 40, 55
4-123	Unspecified works	10, 25, 40, 55
4-116	Kinematograph works	10, 25, 40, 55
4-180	Glass works	10, 25, 40, 55
4-60	Foundries/coach works/motor repair depot	11, 26, 41, 56
4-15	Printing works	12, 27, 42, 57
4-75	Chemical works	12, 27, 42, 57
4-72	Petroleum jelly works	12, 27, 42, 57
4-100	Printing works	13, 28, 43, 48
4-69	Dye works	13, 28, 43, 48

4-112	Perfumery	13, 28, 43, 48
4-88	Printing works	13, 28, 43, 48
4-204	Laundry	13, 28, 43, 48
4-205	Printing works	13, 28, 43, 48
4-173	Printing works	13, 28, 43, 48
4-62	Gas works	14, 29, 44, 59
4-102	Engineering works/unspecified works	15, 30, 45, 60
4-82	Scrap metal yard. Unspecified works subsequently. Industrial estate currently	15, 30, 45, 60
4-68	Scrap metal/engineering	15, 30, 45, 60
4-70	Engineering depot, subsequently retail estate	15, 30, 45, 60
4-73	Colas works	15, 30, 45, 60
4-67	Transformer station	15, 30, 45, 60
4-71	Animal processing plant	16, 31, 46, 61
4-155	Power station	17, 32, 47, 62
4-156	Electric sub-station	17, 32, 47, 62

3.1.4 Contaminant types included within the risk assessments are based on the Priority Contaminants Report CLR 8². Although withdrawn, this appendix is still commonly used and is considered good practice.

3.1.5 The remainder of this appendix presents the risk assessment for the sites set out in Table 2. The following abbreviations are used in these tables:

- CSM - conceptual site model;
- MTBE - methyl tert butyl ether;
- PAH - polycyclic aromatic hydrocarbons;
- PCB - polychlorinated biphenyls; and
- VOC - volatile organic compounds.

² Defra and Environment Agency, (2002), *Potential contaminants for the assessment of land- R&D Publication*, Bristol, Environment Agency.

3.1 Baseline risk assessment

Table 3: Summary CSM for on-site railway land located over the existing Old Oak Common Sidings at baseline (Area ref: 4-248)

Source	Receptor	Pathway	Probability	Consequence	Risk at baseline without mitigation
Residual contamination in made ground (e.g. ballast) and on-going contamination from on-site activities: PCB, metals, asbestos, PAH and chlorinated hydrocarbons; potentially low levels of ground gas (methane, carbon dioxide and VOC)	Site users (rail staff)	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Likely	Medium	Moderate
		Exposure to asphyxiative or explosive gases	Low likelihood	Severe	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Low likelihood	Minor	Low
		Off-site migration of wind-blown dust	Low likelihood	Minor	Low
	Grand Union Canal	Lateral and vertical migration of mobile contamination	Low likelihood	Minor	Low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Likely	Minor	Moderate/low
		Migration of hazardous gas (potentially asphyxiative or explosive gases) to confined spaces via permeable strata or conduits	Unlikely	Severe	Moderate/low

Table 4: Summary CSM for other on-site railway land at baseline (Area ref: 4-257/4-263/4-265/4-252)

Source	Receptor	Pathway	Probability	Consequence	Risk at baseline without mitigation
Residual contamination in made ground (e.g. ballast): PCB, metals, asbestos, PAH and chlorinated hydrocarbons); potentially low levels of ground gas (methane, carbon dioxide and VOC)	Site users (rail staff)	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
		Exposure to asphyxiative or explosive gases	Unlikely	Severe	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Low likelihood	Minor	Low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Low likelihood	Minor	Low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low
		Migration of hazardous gas and vapours to confined spaces via permeable strata or conduits	Unlikely	Severe	Moderate/low

* Pollutant linkage refers to 4-263/4-265 only

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Table 5: Summary CSM for other off-site railway land at baseline (Area ref: 4-03/4-54/4-260/4-262/4-264)

Source	Receptor	Pathway	Probability	Consequence	Risk at baseline without mitigation
Residual contamination in made ground (e.g. ballast): PCB, metals, asbestos, PAH and chlorinated hydrocarbons); potentially low levels of ground gas (methane, carbon dioxide and VOC)	Site users (rail staff)	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
		Exposure to asphyxiative or explosive gases	Unlikely	Severe	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Low likelihood	Minor	Low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Low likelihood	Minor	Low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Likely	Minor	Moderate/low
		Migration of hazardous gas and vapours to confined spaces via permeable strata or conduits	Unlikely	Severe	Moderate/low

* Pollutant linkage refers to 4-262/4-264 only

Table 6: Summary CSM for on-site depots, industrial, retail, warehouses and trading estates at baseline (Area ref: 4-121/ 4-139/4-124/4-143/4-141/4-145/4-134/4-133)

Source	Receptor	Pathway	Probability	Consequence	Risk at baseline without mitigation
Contamination from on-going activities residual contamination from former activities – hydrocarbons including waste oils, heavy metals and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

* Pollutant linkage refers to 4-121, 4-124, 4-143 and 4-145 only

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Table 7: Summary CSM for offsite/adjacent industrial estates/depots/warehouses at baseline (Area ref: 4-148/4-83/4-149)

Source	Receptor	Pathway	Probability	Consequence	Risk at baseline without mitigation
Contamination from on-going activities – hydrocarbons including waste oils, heavy metals and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

Table 8: Summary CSM for a former offsite garage and motor works at baseline (Area ref: 4-16)

Source	Receptor	Pathway	Probability	Consequence	Risk at baseline without mitigation
Residual contamination from former activities: contaminants primarily comprising petroleum and diesel range hydrocarbons, methyl lead and MTBE	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Low likelihood	Minor	Low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low
		Migration of hazardous gas and vapours to confined spaces via permeable strata or conduits	Unlikely	Severe	Moderate/low

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Table 9: Summary CSM for on-site former wharf, timber yard, paper works and current unspecified works at baseline (Area ref: 4-61/ 4-79/4-77/4-140/ 4-158/4-131)

Source	Receptor	Pathway	Probability	Consequence	Risk at baseline without mitigation
Residual contamination from former activities: hydrocarbons including waste oils, heavy metals, PAH, chlorinated solvents	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

* Pollutant linkage refers to 4-61, 4-79 and 4-77 only

Table 10: Summary CSM for off-site/adjacent former general works, stone works, kinematograph works, paper works, timber yard, glass works, unspecified works, sillimanite works and current building yard at baseline
(Area ref: 4-53/ 4-59/4-81/4-147/4-74/4-55/4-116/4-180/4-123)

Source	Receptor	Pathway	Probability	Consequence	Risk at baseline without mitigation
Contamination from on-going activities and residual contamination in made ground – hydrocarbons including waste oils, heavy metals, arsenic, PCB, phenols, cresols, chlorine, chlorinated hydrocarbons, dioxins and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours, volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

* Pollutant linkage refers to 4-53/ 4-59/4-81/4-74/4-55/4-180 only

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Table 11: Summary CSM for on-site former foundry at baseline (Area ref: 4-6o)

Source	Receptor	Pathway	Probability	Consequence	Risk at baseline without mitigation
Residual contamination from previous activities– oil/fuel hydrocarbons, PAH, heavy metals , PCB, sulphates, sulphur and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Medium	Low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

Table 12: Summary CSM for on-site former printing works, chemical works and petroleum jelly works at baseline (Area ref: 4-72/4-75 and 4-15*)

Source	Receptor	Pathway	Probability	Consequence	Risk at baseline without mitigation
Residual contamination from previous activities – oil/fuel hydrocarbons, acetones, PAH, aromatic hydrocarbons, chlorinated hydrocarbons, PCB, cyanide, organotin compounds, heavy metals and semi-metals and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Medium	Low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Low likelihood	Minor	Low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

* 4-15 is located over the proposed Salusbury Road vent shaft site

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Table 13: Summary CSM for off-site/adjacent former printing works, dye works, laundry facilities and perfume works at baseline (Area ref: 4-100/ 4-69/ 4-112/4-88/4-204/4-205/4-173)

Source	Receptor	Pathway	Probability	Consequence	Risk at baseline without mitigation
Residual contamination from previous activities – oil/fuel hydrocarbons, PAH, aromatic hydrocarbons, chlorinated hydrocarbons, PCB, cyanide, heavy metals and semi-metals and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Medium	Low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Low likelihood	Minor	Low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Low likelihood	Minor	Low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

* Pollutant linkage refers to 4-173 only

Table 14: Summary CSM for on-site former gas works (now railway land) at baseline (Area ref: 4-62)

Source	Receptor	Pathway	Probability	Consequence	Risk at baseline without mitigation
Residual contamination from previous activities: metals and semi-metals, hydrocarbons, PAH, ammoniacal liquors, complex and free cyanide, sulphates, sulphur and asbestos	Site users (rail staff)	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Likely	Medium	Moderate
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Low likelihood	Minor	Low
		Off-site migration of wind-blown dust	Low likelihood	Minor	Low
	Grand Union Canal	Lateral and vertical migration of mobile contamination	Unlikely	Minor	Low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Likely	Minor	Moderate/low

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Table 15: Summary CSM for an on-site sub-station, transformer station, engineering works, colas works, scrap metal yard and motor engineering works at baseline (Area ref: 4-102/4-68/4-82/4-73/4-70/4-67)

Source	Receptor	Pathway	Probability	Consequence	Risk at baseline without mitigation
Contamination from on-going and former activities including: hydrocarbons, waste oils, phenols, PAH, PCB, heavy metals and semi-metals and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Low likelihood	Minor	Low
	Grand Union Canal*	Leaching of soluble contaminants or migration of liquid contaminants	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

* Pollutant linkage refers to 4-70 only

Table 16: Summary CSM for off-site former animal processing works at baseline (Area ref: 4-71)

Source	Receptor	Pathway	Probability	Consequence	Risk at baseline without mitigation
Contamination from former activities and in made ground – aromatic hydrocarbons including waste oils, dieldrin, phenols, PCB, some heavy metals, anthrax, chlorinated solvents and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Medium	Low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Unlikely	Minor	Very low

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Table 17: Summary CSM for an off-site power station and sub-station at baseline (Area ref: 4-155/ 4-156)

Source	Receptor	Pathway	Probability	Consequence	Risk at baseline without mitigation
Contamination from on-going and former activities including: hydrocarbons, waste oils, phenols, PAH, PCB, heavy metals and semi-metals and asbestos	Current site users	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Medium	Low
	Grand Union Canal	Leaching of soluble contaminants or migration of liquid contaminants	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

3.2 Construction risk assessment

Table 18: Summary CSM for on-site railway land located over the existing Old Oak Common Sidings during construction phase (Area ref: 4-248)

Source	Receptor	Pathway	Probability	Consequence	Risk with construction phase mitigation
Residual contamination in made ground (e.g. ballast) and on-going contamination from on-site activities: PCB, metals, asbestos, PAH and chlorinated hydrocarbons; potentially low levels of ground gas (methane, carbon dioxide and VOC)	Site users (rail staff)	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Not present during construction		
		Exposure to asphyxiative or explosive gases	Not present during construction		
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Low likelihood	Minor	Low
		Off-site migration of wind-blown dust	Low likelihood	Minor	Low
	Grand Union Canal	Lateral and vertical migration of mobile contamination	Low likelihood	Minor	Low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Likely	Minor	Moderate/low
		Migration of hazardous gas and vapours to confined spaces via permeable strata or conduits	Unlikely	Severe	Moderate/low

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Table 19: Summary CSM for on-site railway land during construction phase (Area ref: 4-257/4-263/4-265/4-252)

Source	Receptor	Pathway	Probability	Consequence	Risk with construction phase mitigation
Residual contamination in made ground (e.g. ballast): PCB, metals, asbestos, PAH and chlorinated hydrocarbons; potentially low levels of ground gas (methane, carbon dioxide and VOC)	Site users (rail staff)	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Not present during construction		
		Exposure to asphyxiative or explosive gases	Not present during construction		
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Low likelihood	Minor	Low
	Grand Union Canal*	Leaching of soluble contaminants or migration of liquid contaminants	Low likelihood	Minor	Low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low
		Migration of hazardous gas and vapours to confined spaces via permeable strata or conduits	Unlikely	Severe	Moderate/low

* Pollutant linkage refers to 4-263/4-265 only

Table 20: Summary CSM for other off-site railway land during construction phase (Area ref: 4-03/4-54/4-260/4-262/4-264)

Source	Receptor	Pathway	Probability	Consequence	Risk with construction phase mitigation
Residual contamination in made ground (e.g. ballast): PCB, metals, asbestos, PAH and chlorinated hydrocarbons); potentially low levels of ground gas (methane, carbon dioxide and VOC)	Site users (rail staff)	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
		Exposure to asphyxiative or explosive gases	Unlikely	Severe	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Low likelihood	Minor	Low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Low likelihood	Minor	Low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Likely	Minor	Moderate/low
		Migration of hazardous gas and vapours to confined spaces via permeable strata or conduits	Unlikely	Severe	Moderate/low

* Pollutant linkage refers to 4-262/4-264 only

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Table 21: Summary CSM for on-site depots, industrial, retail, warehouses and trading estates during construction phase (Area ref: 4-121/ 4-139/4-124/4-141/4-143/4-145/ 4-134/ 4-133)

Source	Receptor	Pathway	Probability	Consequence	Risk with construction phase mitigation
Contamination from on-going activities and in made ground – hydrocarbons including waste oils, heavy metals and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Not present during construction		
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal*	Leaching of soluble contaminants or migration of liquid contaminants	Unlikely	Minor	Very Low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

* Pollutant linkage refers to 4-121, 4-124, 4-143 and 4-145 only

Table 22: Summary CSM for offsite/adjacent industrial estates/depots/warehouses during construction phase (Area ref: 4-148/ 4-83/ 4-149)

Source	Receptor	Pathway	Probability	Consequence	Risk with construction phase mitigation
Contamination from on-going activities – hydrocarbons including waste oils, heavy metals and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

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Table 23: Summary CSM for an off-site former garage and motor works during construction phase (Area ref: 4-16)

Source	Receptor	Pathway	Probability	Consequence	Risk with construction phase mitigation
Residual contamination from former activities: contaminants primarily comprising petroleum and diesel range hydrocarbons, methyl lead and MTBE	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Low likelihood	Minor	Low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low
		Migration of hazardous gas and vapours to confined spaces via permeable strata or conduits	Unlikely	Severe	Moderate/low

Table 24: Summary CSM for on-site former wharf, timber yard, paper works and current unspecified works during construction phase (Area ref: 4-61/ 4-79/4-77/4-140/ 4-158/4-131)

Source	Receptor	Pathway	Probability	Consequence	Risk with construction phase mitigation
Residual contamination from former activities: hydrocarbons including waste oils, heavy metals, PAH, chlorinated solvents	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Not present during construction		
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal*	Leaching of soluble contaminants or migration of liquid contaminants	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

* Pollutant linkage refers to 4-61, 4-79 and 4-77 only

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Table 25: Summary CSM for off-site/adjacent general works, stone works, kinematograph works, paper works, timber yard, building yard, unspecified works, glass works and sillimanite works during construction phase
(Area ref: 4-53/ 4-59/4-81/4-147/4-74/4-55/4-116/4-180/4-123)

Source	Receptor	Pathway	Probability	Consequence	Risk with construction phase mitigation
Contamination from on-going activities and residual contamination in made ground – hydrocarbons including waste oils, heavy metals, arsenic, PCB, phenols, cresols, chlorine, chlorinated hydrocarbons, dioxins and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours, volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

* Pollutant linkage refers to 4-53/ 4-59/4-81/4-74/4-55/4-180 only

Table 26: Summary CSM for on-site former foundry during construction phase (Area ref: 4-6o)

Source	Receptor	Pathway	Probability	Consequence	Risk with construction phase mitigation
Residual contamination from previous activities– oil/fuel hydrocarbons, PAH, heavy metals , PCB, sulphates, sulphur and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Not present during construction		
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

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Table 27: Summary CSM for on-site former printing works, chemical works and petroleum jelly works during construction phase (Area ref: 4-72/4-75 and 4-15*)

Source	Receptor	Pathway	Probability	Consequence	Risk with construction phase mitigation
Residual contamination from previous activities – oil/fuel hydrocarbons, acetones, PAH, aromatic hydrocarbons, chlorinated hydrocarbons, PCB, cyanide, organotin compounds, heavy metals and semi-metals and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Not present during construction		
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Low likelihood	Minor	Low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

* 4-15 is located over the proposed Salusbury Road vent shaft site

Table 28: Summary CSM for off-site/adjacent former printing works, dye works, laundry facilities and perfume works during construction phase (Area ref: 4-100/ 4-69/ 4-112/ 4-88/ 4-204/ 4-205/4-173)

Source	Receptor	Pathway	Probability	Consequence	Risk with construction phase mitigation
Residual contamination from previous activities – oil/fuel hydrocarbons, acetones, PAH, aromatic hydrocarbons, chlorinated hydrocarbons, PCB, cyanide, organotin compounds, heavy metals and semi-metals and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Medium	Low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Low likelihood	Minor	Low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Low likelihood	Minor	Low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

* Pollutant linkage refers to 4-173 only

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Table 29: Summary CSM for former on-site gas works (currently railway land) during construction phase (Area ref: 4-62)

Source	Receptor	Pathway	Probability	Consequence	Risk with construction phase mitigation
Residual contamination from previous activities: metals and semi-metals, hydrocarbons, PAH, ammoniacal liquors, complex and free cyanide, sulphates, sulphur and asbestos	Site users (rail staff)	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Not present during construction		
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Low likelihood	Minor	Low
		Off-site migration of wind-blown dust	Low likelihood	Minor	Low
	Grand Union Canal	Lateral and vertical migration of mobile contamination	Unlikely	Minor	Low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Likely	Minor	Moderate/low

Table 30: Summary CSM for an on-site sub-station, transformer station, engineering works, colas works, scrap metal yard and motor engineering works during construction phase (Area ref: 4-102/4-68/4-82/4-73/4-70/4-67)

Source	Receptor	Pathway	Probability	Consequence	Risk with construction phase mitigation
Contamination from on-going and former activities including: hydrocarbons, waste oils, phenols, PAH, PCB, heavy metals and semi-metals and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Not present during construction		
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Low likelihood	Minor	Low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

* Pollutant linkage refers to 4-70 only

Table 31: Summary CSM for off-site animal processing works during construction phase (Area ref: 4-71)

Source	Receptor	Pathway	Probability	Consequence	Risk with construction phase mitigation
Contamination from former activities and in made ground – aromatic hydrocarbons including waste oils, dieldrin, phenols, PCB, some heavy metals, anthrax, chlorinated solvents and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Medium	Low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Unlikely	Minor	Very low

Table 31: CSM for an off-site power station and sub-station during construction phase (Area ref: 4-155/4-156)

Source	Receptor	Pathway	Probability	Consequence	Risk with construction phase mitigation
Contamination from on-going and former activities including: hydrocarbons, waste oils, phenols, PAH, PCB, heavy metals and semi-metals and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Medium	Low
	Grand Union Canal	Leaching of soluble contaminants or migration of liquid contaminants	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

3.3 Post-construction risk assessment

Table 32: Summary CSM for on-site railway land located over the existing Old Oak Common Sidings post construction (Area ref: 4-248)

Source	Receptor	Pathway	Probability	Consequence	Risk with permanent works mitigation
Residual contamination in made ground (e.g. ballast): PCB, metals, asbestos, PAH and chlorinated hydrocarbons; potentially low levels of ground gas (methane, carbon dioxide and VOC)	Site end users (rail staff)	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Minor	Very low
		Exposure to asphyxiative or explosive gases	Unlikely	Medium	Low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal	Lateral and vertical migration of mobile contamination	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Unlikely	Minor	Very low
		Migration of hazardous gas and vapours to confined spaces via permeable strata or conduits	Unlikely	Medium	Low

Table 33: Summary CSM for on-site railway land during post-construction (Area ref: 4-257/4-263/4-265/4-252)

Source	Receptor	Pathway	Probability	Consequence	Risk with permanent works mitigation
Residual contamination in made ground (e.g. ballast): PCB, metals, asbestos, PAH and chlorinated hydrocarbons); potentially low levels of ground gas (methane, carbon dioxide and VOC)	Site end users (rail staff)	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Minor	Very low
		Exposure to asphyxiative or explosive gases	Unlikely	Medium	Low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Unlikely	Minor	Very low
		Migration of hazardous gas and vapours to confined spaces via permeable strata or conduits	Unlikely	Medium	Low

* Pollutant linkage refers to 4-263/4-265 only

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Table 34: Summary CSM for other off-site railway land post-construction (Area ref: 4-03/4-54/4-260/4-262/4-264)

Source	Receptor	Pathway	Probability	Consequence	Risk with permanent works mitigation
Residual contamination in made ground (e.g. ballast): PCB, metals, asbestos, PAH and chlorinated hydrocarbons); potentially low levels of ground gas (methane, carbon dioxide and VOC)	Site users (rail staff)	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
		Exposure to asphyxiative or explosive gases	Unlikely	Severe	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Low likelihood	Minor	Low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Low likelihood	Minor	Low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Likely	Minor	Moderate/low
		Migration of hazardous gas and vapours to confined spaces via permeable strata or conduits	Unlikely	Severe	Moderate/low

* Pollutant linkage refers to 4-262/4-264 only

Table 35: Summary CSM for on-site depots, industrial, retail, warehouses and trading estates post construction (Area ref: 4-121/ 4-139/4-124/4-141/4-143/4-145/ 4-134/4-133)

Source	Receptor	Pathway	Probability	Consequence	Risk with permanent works mitigation
Contamination from on-going activities residual contamination from former activities – hydrocarbons including waste oils, heavy metals and asbestos	Site end users	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Minor	Very low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Unlikely	Minor	Very low

* Pollutant linkage refers to 4-121, 4-124, 4-143 and 4-145 only

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Table 36: Summary CSM for offsite/adjacent industrial estates/depots/warehouses post construction (Area ref: /4-148/ 4-83/ 4-149)

Source	Receptor	Pathway	Probability	Consequence	Risk with permanent works mitigation
Contamination from on-going activities – hydrocarbons including waste oils, heavy metals and asbestos	Site end users	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

Table 37: Summary CSM for a former off-site garage and motor works post construction (Area ref: 4-16)

Source	Receptor	Pathway	Probability	Consequence	Risk with permanent works mitigation
Residual contamination from former activities: contaminants primarily comprising petroleum and diesel range hydrocarbons, methyl lead and MTBE	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Low likelihood	Minor	Low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low
		Migration of hazardous gas and vapours to confined spaces via permeable strata or conduits	Unlikely	Severe	Moderate/low

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Table 38: Summary CSM for on-site former wharf, timber yard, paper works and current unspecified works post construction (Area ref: 4-61/ 4-79/4-77/4-140/4-158/4-131)

Source	Receptor	Pathway	Probability	Consequence	Risk with permanent works mitigation
Contamination from on-going activities and in made ground – hydrocarbons including waste oils, heavy metals, PAH, PCB and asbestos	Site end users	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Minor	Very low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours, volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Unlikely	Minor	Very low

* Pollutant linkage refers to 4-61, 4-79 and 4-77 only

Table 39: Summary CSM for off-site/adjacent general works, stone works, kinematograph works, paper works, timber yard, building yard, unspecified works and sillimanite works post construction (Area ref: 4-53/ 4-59/4-81/4-147/4-74/4-55/4-116/4-180/4-123)

Source	Receptor	Pathway	Probability	Consequence	Risk with permanent works mitigation
Contamination from on-going activities and residual contamination in made ground – hydrocarbons including waste oils, heavy metals, arsenic, PCB, phenols, cresols, chlorine, chlorinated hydrocarbons, dioxins and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours, volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal	Lateral and vertical migration of mobile contamination	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

* Pollutant linkage refers to 4-53/ 4-59/4-81/4-74/4-55/4-180 only

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Table 40: Summary CSM for on-site former foundry post construction (Area ref: 4-60)

Source	Receptor	Pathway	Probability	Consequence	Risk with permanent works mitigation
Residual contamination from previous activities – oil/fuel hydrocarbons, PAH, heavy metals, PCB, sulphates, sulphur and asbestos	Site end users	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Minor	Very low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Unlikely	Minor	Very low

Table 41: Summary CSM for on-site former printing works, chemical works and petroleum jelly works post construction (Area ref: 4-72/4-75 and 4-15*)

Source	Receptor	Pathway	Probability	Consequence	Risk with permanent works mitigation
Residual contamination from previous activities – oil/fuel hydrocarbons, acetones, PAH, aromatic hydrocarbons, chlorinated hydrocarbons, PCB, organotin compounds, heavy metals and semi-metals and asbestos	Site end users	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Minor	Very low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Unlikely	Minor	Very low

* 4-15 is located over the proposed Salusbury Road vent shaft site

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Table 42: Summary CSM for off-site/adjacent former printing works, dye works, laundry facilities and perfume works post construction (Area ref: 4-100/ 4-69/ 4-112/ 4-88/4-204/ 4-205/4-173)

Source	Receptor	Pathway	Probability	Consequence	Risk with permanent works mitigation
Residual contamination from previous activities – oil/fuel hydrocarbons, PAH, aromatic hydrocarbons, chlorinated hydrocarbons, PCB, cyanide, heavy metals and semi-metals and asbestos	Site users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Medium	Low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Low likelihood	Minor	Low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Low	Minor	Low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

* Pollutant linkage refers to 4-173 only

Table 43: Summary CSM for on-site former gas works (now railway land) post construction (Area ref: 4-62)

Source	Receptor	Pathway	Probability	Consequence	Risk with permanent works mitigation
Residual contamination from previous activities: metals and semi-metals, hydrocarbons, PAH, ammoniacal liquors, complex and free cyanide, sulphates, sulphur and asbestos	Site users (rail staff)	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Minor	Very low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas	Off-site migration of soil vapours, and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal	Lateral and vertical migration of mobile contamination	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

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Table 44: Summary CSM for an on-site sub-station, transformer station, engineering works, colas works, scrap metal yard and motor engineering works post construction (Area ref: 4-102/4-68/4-82/4-73/4-70/4-67)

Source	Receptor	Pathway	Probability	Consequence	Risk with permanent works mitigation
Contamination from on-going and former activities including: hydrocarbons, waste oils, phenols, PAH, PCB, heavy metals and semi-metals and asbestos	Site end users	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Minor	Very low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Grand Union Canal*	Lateral and vertical migration of mobile contamination	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

* Pollutant linkage refers to 4-70 only

Table 45: Summary CSM for off-site animal processing works post construction (Area ref: 4-71)

Source	Receptor	Pathway	Probability	Consequence	Risk with permanent works mitigation
Contamination from former activities and in made ground – aromatic hydrocarbons including waste oils, dieldrin, phenols, PCB, some heavy metals, anthrax, chlorinated solvents and asbestos	Site end users	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Unlikely	Medium	Low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Unlikely	Minor	Very low

Table 46: Summary CSM for an off-site power station and sub-station post construction (Area ref: 4-155/ 4-156)

Source	Receptor	Pathway	Probability	Consequence	Risk with permanent works mitigation
Contamination from on-going and former activities including: hydrocarbons, waste oils, phenols, PAH, PCB, heavy metals and semi-metals and asbestos	Site end users - workers in businesses	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Low likelihood	Medium	Moderate/low
	Adjacent site users, such as those within residential properties and workers in the surrounding light industrial/residential areas and rail areas	Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)	Unlikely	Minor	Very low
		Off-site migration of wind-blown dust	Unlikely	Medium	Low
	Grand Union Canal	Leaching of soluble contaminants or migration of liquid contaminants	Unlikely	Minor	Very low
	Buildings/underground structures and services	Direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low likelihood	Minor	Low

3.4 Assessment of temporary (construction) and permanent (post-construction) effects

Table 47: Significance of effect assessment for on-site railway land located over the existing Old Oak Common Sidings (Area ref: 4-248)

Contaminant linkage	Baseline	Construction	Post-construction	Construction effect	Post-construction effect
Exposure of on-site human receptors to contamination by direct contact, ingestion and inhalation of contaminants in soil, soil-derived dust or contaminated water	Moderate	N/A	Very low	Negligible	Moderate beneficial
Exposure of on-site humans to contamination by inhalation of ground-gas and volatile vapours from contaminated soil/water	Moderate/low	N/A	Low	Negligible	Minor beneficial
Exposure of adjacent human receptors (residents) to contamination by inhalation of migrating ground-gas and volatile vapours from contaminated soil/water	Low	Low	Very low	Negligible	Minor beneficial
Exposure of adjacent human receptors (in commercial properties) to contamination by direct contact, ingestion and inhalation of contaminants in windblown, soil-derived dust	Low	Low	Very low	Negligible	Minor beneficial
Lateral and vertical migration of mobile contamination into the Grand Union Canal	Low	Low	Very low	Negligible	Minor beneficial
Migration of contamination and direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Moderate/low	Moderate/low	Very low	Negligible	Moderate beneficial
Migration of hazardous gas and vapours to confined spaces via permeable strata or conduits	Moderate/low	Moderate/low	Low	Negligible	Minor beneficial
Overall significance				Negligible effect	Minor to moderate beneficial effect

Table 48: Significance of effect assessment for on-site railway land (Area ref: 4-257/4-263/4-265/4-252)

Contaminant linkage	Baseline	Construction	Post-construction	Construction effect	Post-construction effect
Exposure of on-site human receptors to contamination by direct contact, ingestion and inhalation of contaminants in soil, soil-derived dust or contaminated water	Moderate/low	N/A	Very low	Negligible	Moderate beneficial
Exposure of on-site humans to contamination by inhalation of ground-gas and volatile vapours from contaminated soil/water	Moderate/low	N/A	Low	Negligible	Minor beneficial
Exposure of adjacent human receptors (residents) to contamination by inhalation of migrating ground-gas and volatile vapours from contaminated soil/water	Very low	Very low	Very low	Negligible	Negligible
Exposure of adjacent human receptors (in commercial properties) to contamination by direct contact, ingestion and inhalation of contaminants in windblown, soil-derived dust	Low	Low	Very low	Negligible	Minor beneficial
Lateral and vertical migration of mobile contamination into the Grand Union Canal	Low	Low	Very low	Negligible	Minor beneficial
Migration of contamination and direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low	Low	Very low	Negligible	Minor beneficial
Migration of hazardous gas and vapours to confined spaces via permeable strata or conduits	Moderate/low	Moderate/low	Low	Negligible	Minor beneficial
Overall significance				Negligible effect	Minor to moderate beneficial effect

Table 49: Significance of effect assessment for other off-site railway land (Area ref: 4-03/4-54/4-260/4-262/4-264)

Contaminant linkage	Baseline	Construction	Post-construction	Construction effect	Post-construction effect
Exposure of on-site human receptors to contamination by direct contact, ingestion and inhalation of contaminants in soil, soil-derived dust or contaminated water	Moderate/low	Moderate/low	Moderate/low	Negligible	Negligible
Exposure of on-site humans to contamination by inhalation of ground-gas and volatile vapours from contaminated soil/water	Moderate/low	Moderate/low	Moderate/low	Negligible	Negligible
Exposure of adjacent human receptors (residents) to contamination by inhalation of migrating ground-gas and volatile vapours from contaminated soil/water	Very low	Very low	Very low	Negligible	Negligible
Exposure of adjacent human receptors (in commercial properties) to contamination by direct contact, ingestion and inhalation of contaminants in windblown, soil-derived dust	Low	Low	Low	Negligible	Negligible
Lateral and vertical migration of mobile contamination into the Grand Union Canal	Low	Low	Low	Negligible	Negligible
Migration of contamination and direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Moderate/low	Moderate/low	Moderate/low	Negligible	Negligible
Migration of hazardous gas and vapours to confined spaces via permeable strata or conduits	Moderate/low	Moderate/low	Moderate/low	Negligible	Negligible
Overall significance				Negligible effect	Negligible effect

Table 50: Significance of effect assessment for on-site depots, industrial, retail, warehouses and trading estates (Area ref: 4-121/ 4-139/4-124/4-141/4-143/4-145/4-134/4-133)

Contaminant linkage	Baseline	Construction	Post-construction	Construction effect	Post-construction effect
Exposure of on-site human receptors to contamination by direct contact, ingestion and inhalation of contaminants in soil, soil-derived dust or contaminated water	Moderate/low	N/A	Very low	Negligible	Minor beneficial
Exposure of adjacent human receptors (residents) to contamination by inhalation of migrating ground-gas and volatile vapours from contaminated soil/water	Very low	Very low	Very low	Negligible	Negligible
Exposure of adjacent human receptors (in commercial properties) to contamination by direct contact, ingestion and inhalation of contaminants in windblown, soil-derived dust	Very low	Very low	Very low	Negligible	Negligible
Lateral and vertical migration of mobile contamination into the Grand Union Canal	Very low	Very low	Very low	Negligible	Negligible
Migration of contamination and direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low	Low	Very low	Negligible	Minor beneficial
Overall significance				Negligible effect	Negligible to minor beneficial effect

Table 51: Significance of effect assessment for offsite/adjacent industrial estates/depots/warehouses (Area ref: 4-148/4-83/4-149)

Contaminant linkage	Baseline	Construction	Post-construction	Construction effect	Post-construction effect
Exposure of on-site human receptors to contamination by direct contact, ingestion and inhalation of contaminants in soil, soil-derived dust or contaminated water	Moderate/low	Moderate/low	Moderate/low	Negligible	Negligible
Exposure of adjacent human receptors (residents) to contamination by inhalation of migrating ground-gas and volatile vapours from contaminated soil/water	Very low	Very low	Very low	Negligible	Negligible
Exposure of adjacent human receptors (in commercial properties) to contamination by direct contact, ingestion and inhalation of contaminants in windblown, soil-derived dust	Very low	Very low	Very low	Negligible	Negligible
Migration of contamination and direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low	Low	Low	Negligible	Negligible
Overall significance				Negligible effect	Negligible effect

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Table 52: Significance of effect assessment for a former off-site garage and motor works (Area ref: 4-16)

Contaminant linkage	Baseline	Construction	Post-construction	Construction effect	Post-construction effect
Exposure of on-site human receptors to contamination by direct contact, ingestion and inhalation of contaminants in soil, soil-derived dust or contaminated water	Moderate/low	Moderate/low	Moderate/low	Negligible	Negligible
Exposure of adjacent human receptors (residents) to contamination by inhalation of migrating ground-gas and volatile vapours from contaminated soil/water	Low	Low	Low	Negligible	Negligible
Exposure of adjacent human receptors (in commercial properties) to contamination by direct contact, ingestion and inhalation of contaminants in windblown, soil-derived dust	Very low	Very low	Very low	Negligible	Negligible
Migration of contamination and direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low	Low	Low	Negligible	Negligible
Migration of hazardous gas and vapours to confined spaces via permeable strata or conduits	Moderate/low	Moderate/low	Moderate/low	Negligible	Negligible
Overall significance				Negligible effect	Negligible effect

Table 53: Significance of effect assessment for on-site former wharf, timber yard, paper works and current unspecified works (Area ref: 4-61/4-79/4-77/4-140/4-158/4-131)

Contaminant linkage	Baseline	Construction	Post-construction	Construction effect	Post-construction effect
Exposure of on-site human receptors to contamination by direct contact, ingestion and inhalation of contaminants in soil, soil-derived dust or contaminated water	Moderate/low	N/A	Very low	Negligible	Moderate beneficial
Exposure of adjacent human receptors (residents) to contamination by inhalation of migrating ground-gas and volatile vapours from contaminated soil/water	Very low	Very low	Very low	Negligible	Negligible
Exposure of adjacent human receptors (in commercial properties) to contamination by direct contact, ingestion and inhalation of contaminants in windblown, soil-derived dust	Very low	Very low	Very low	Negligible	Negligible
Lateral and vertical migration of mobile contamination into the Grand Union Canal	Very low	Very low	Very low	Negligible	Negligible
Migration of contamination and direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low	Low	Very low	Negligible	Minor beneficial
Overall significance				Negligible effect	Minor to moderate beneficial effect

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Table 54: Significance of effect assessment for off-site/adjacent general works, stone works, kinematograph works, paper works, glass works, timber yard, unspecified works, building yard and sillimanite works (Area ref: 4-53/4-59/4-81/4-147/4-74/4-55/4-116/4-180/4-123)

Contaminant linkage	Baseline	Construction	Post-construction	Construction effect	Post-construction effect
Exposure of on-site human receptors to contamination by direct contact, ingestion and inhalation of contaminants in soil, soil-derived dust or contaminated water	Moderate/low	Moderate/low	Moderate/low	Negligible	Negligible
Exposure of adjacent human receptors (residents) to contamination by inhalation of migrating ground-gas and volatile vapours from contaminated soil/water	Very low	Very low	Very low	Negligible	Negligible
Exposure of adjacent human receptors (in commercial properties) to contamination by direct contact, ingestion and inhalation of contaminants in windblown, soil-derived dust	Very low	Very low	Very low	Negligible	Negligible
Lateral and vertical migration of mobile contamination into the Grand Union Canal	Very low	Very low	Very low	Negligible	Negligible
Migration of contamination and direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low	Low	Low	Negligible	Negligible
Overall significance				Negligible effect	Negligible effect

Table 55: Significance of effect assessment for on-site former foundry (Area ref: 4-60)

Contaminant linkage	Baseline	Construction	Post-construction	Construction effect	Post-construction effect
Exposure of on-site human receptors to contamination by direct contact, ingestion and inhalation of contaminants in soil, soil-derived dust or contaminated water	Low	N/A	Very low	Negligible	Minor beneficial
Exposure of adjacent human receptors (residents) to contamination by inhalation of migrating ground-gas and volatile vapours from contaminated soil/water	Very low	Very low	Very low	Negligible	Negligible
Exposure of adjacent human receptors (in commercial properties) to contamination by direct contact, ingestion and inhalation of contaminants in windblown, soil-derived dust	Very low	Very low	Very low	Negligible	Negligible
Migration of contamination and direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low	Low	Very low	Negligible	Minor beneficial
Overall significance				Negligible effect	Negligible to minor beneficial effect

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Table 56: Significance of effect assessment for on-site former printing works, chemical works and petroleum jelly works (Area ref: 4-72/4-75/4-15)

Contaminant linkage	Baseline	Construction	Post-construction	Construction effect	Post-construction effect
Exposure of on-site human receptors to contamination by direct contact, ingestion and inhalation of contaminants in soil, soil-derived dust or contaminated water	Low	N/A	Very low	Negligible	Minor beneficial
Exposure of adjacent human receptors (residents) to contamination by inhalation of migrating ground-gas and volatile vapours from contaminated soil/water	Low	Low	Very low	Negligible	Minor beneficial
Exposure of adjacent human receptors (in commercial properties) to contamination by direct contact, ingestion and inhalation of contaminants in windblown, soil-derived dust	Very low	Very low	Very low	Negligible	Negligible
Migration of contamination and direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low	Low	Very low	Negligible	Minor beneficial
Overall significance				Negligible effect	Negligible to minor beneficial effect

Table 57: Significance of effect assessment for off-site/adjacent former printing works, dye work, laundry facilities and perfume works (Area ref: 4-100/4-69/4-112/4-88/4-204/4-205/4-173)

Contaminant linkage	Baseline	Construction	Post-construction	Construction effect	Post-construction effect
Exposure of on-site human receptors to contamination by direct contact, ingestion and inhalation of contaminants in soil, soil-derived dust or contaminated water	Low	Low	Low	Negligible	Negligible
Exposure of adjacent human receptors (residents) to contamination by inhalation of migrating ground-gas and volatile vapours from contaminated soil/water	Low	Low	Low	Negligible	Negligible
Exposure of adjacent human receptors (in commercial properties) to contamination by direct contact, ingestion and inhalation of contaminants in windblown, soil-derived dust	Very low	Very low	Very low	Negligible	Negligible
Lateral migration of mobile contaminants into the Grand Union Canal	Low	Low	Low	Negligible	Negligible
Migration of contamination and direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low	Low	Low	Negligible	Negligible
Overall significance				Negligible effect	Negligible effect

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Table 58: Significance of effect assessment for on-site former gas works (now railway land) (Area ref: 4-62)

Contaminant linkage	Baseline	Construction	Post-construction	Construction effect	Post-construction effect
Exposure of on-site human receptors to contamination by direct contact, ingestion and inhalation of contaminants in soil, soil-derived dust or contaminated water	Moderate	N/A	Very low	Negligible	Moderate beneficial
Exposure of adjacent human receptors (residents) to contamination by inhalation of migrating ground-gas and volatile vapours from contaminated soil/water	Low	Low	Very low	Negligible	Minor beneficial
Exposure of adjacent human receptors (in commercial properties) to contamination by direct contact, ingestion and inhalation of contaminants in windblown, soil-derived dust	Low	Low	Very low	Negligible	Minor beneficial
Lateral and vertical migration of mobile contamination into the Grand Union Canal	Low	Low	Low	Negligible	Negligible
Migration of contamination and direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Moderate/low	Moderate/low	Low	Negligible	Minor beneficial
Overall significance				Negligible effect	Negligible to moderate beneficial effect

Table 59: Significance of effect assessment for an on-site sub-station, transformer station, engineering works, colas works, scrap metal yard and motor engineering works (Area ref: 4-102/4-68/4-82/4-73/4-70/4-67)

Contaminant linkage	Baseline	Construction	Post-construction	Construction effect	Post-construction effect
Exposure of on-site human receptors to contamination by direct contact, ingestion and inhalation of contaminants in soil, soil-derived dust or contaminated water	Moderate/low	N/A	Very Low	Negligible	Moderate beneficial
Exposure of adjacent human receptors (residents) to contamination by inhalation of migrating ground-gas and volatile vapours from contaminated soil/water	Very low	Very low	Very low	Negligible	Negligible
Exposure of adjacent human receptors (in commercial properties) to contamination by direct contact, ingestion and inhalation of contaminants in windblown, soil-derived dust	Low	Low	Very low	Negligible	Minor beneficial
Lateral and vertical migration of mobile contamination into the Grand Union Canal	Very low	Very low	Very low	Negligible	Negligible
Migration of contamination and direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low	Low	Very low	Negligible	Negligible
Overall significance				Negligible	Negligible to moderate beneficial effect

Table 6o: Significance of effect assessment for off-site former animal processing works (Area ref: 4-71)

Contaminant linkage	Baseline	Construction	Post-construction	Construction effect	Post-construction effect
Exposure of on-site human receptors to contamination by direct contact, ingestion and inhalation of contaminants in soil, soil-derived dust or contaminated water	Low	Low	Low	Negligible	Negligible
Exposure of adjacent human receptors (residents) to contamination by inhalation of migrating ground-gas and volatile vapours from contaminated soil/water	Very low	Very low	Very low	Negligible	Negligible
Exposure of adjacent human receptors (in commercial properties) to contamination by direct contact, ingestion and inhalation of contaminants in windblown, soil-derived dust	Very low	Very low	Very low	Negligible	Negligible
Migration of contamination and direct contact with buildings receptors including foundations and services	Very low	Very low	Very low	Negligible	Negligible
Overall significance				Negligible effect	Negligible effect

Table 61: Significance of effect assessment for an off-site power station and sub-station (Area ref: 4-155/4-156)

Contaminant linkage	Baseline	Construction	Post-construction	Construction effect	Post-construction effect
Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Moderate/low	Moderate/low	Moderate/low	Negligible	Negligible
Exposure of adjacent site users to contaminated vapours and/or volatile organic compounds	Very low	Very low	Very low	Negligible	Negligible
Exposure of adjacent site users to contaminated dust	Low	Low	Low	Negligible	Negligible
Lateral and vertical migration of mobile contamination into the Grand Union Canal	Very low	Very low	Very low	Negligible	Negligible
Migration of contamination and direct contact of fabric of buildings and services (e.g. foundations, and water supply pipes)	Low	Low	Low	Negligible	Negligible
Overall significance				Negligible effect	Negligible effect

4 Inspections notes and other site data

4.1.1 This section presents the following data:

- site inspection notes for those key potentially contaminated sites visited during the study period;
- names of ground investigation or contamination survey reports reviewed during the study period; and
- any other relevant site data.

4.1.2 The remainder of this appendix presents the inspection notes and other data for the sites.

Table 62: Site inspection notes

Walkover location Land parcel ref: N/A	Details	
Date of walkover	6 June 2013	
Site location	Channel Gate Road, London Borough of Ealing	
Site access	Access from Channel Gate Road. Walkover of main roads through site only, no access into the individual leased plots, described below	
Site description	<p>Irregular shaped parcel of land adjacent to the main line railway track with sidings leading into the site. Sidings associated with 'English, Welsh and Scottish Railway'</p> <p>Site as a whole is split into different parcels of land leased to tenants such as Lynch Waste Solutions, Falcon Surfacing Ltd, a scrapyard and Willesden Cement Depot. National Grid site located directly adjacent to the site, with associated overhead conveyors located across the site</p>	
Topography and surroundings - elevation in relation to surroundings, hummocks, breaks of slope etc.	Site level with the surrounding area. Elevation decreases to the south when adjacent to the Grand Union Canal (external to the site)	
Neighbouring site use (in particular note any potentially contaminative activities or sensitive receptors)	North	Bordering the immediate north of the site is the West Coast Main Line. On the northern side of this track is a bus depot, railway sidings and residential properties accessed from Harley Road
	South	The Grand Union Canal borders the south of the site. Further south on the opposite side of the canal are areas of warehousing/light industrial and commercial buildings with associated car parking
	East	Residential areas of Stephenson Street, Goodhall Street and Old Oak Lane. Residential area bordered to the east by the rail track. Powerday head office and materials recycling facility located further east
	West	National Grid site and Park Royal salvage yard located to the west
Site buildings - Extent, size, type and usage. Boiler rooms, electrical switchgear	Various site buildings associated within the different tenants' uses. Two silos associated with the Willesden cement depot	
Ground surfacing – type and condition	Hard surfacing (concrete) with numerous areas of cracking/potholes. Oil/petrol spills present on the ground surfacing at one location	
Vegetation - evidence of distress, unusual growth or invasive species such as Japanese Knotweed	Vegetation borders the site to the south and within a site car park area. Pockets of vegetation adjacent to the site fences of the scrapyard	
Services – evidence of buried service	None observed	

Walkover location Land parcel ref: N/A	Details
Fuels or chemicals on-site Notes to include: a) tanks (above or below ground); b) containment systems (e.g. bund, drainage interceptors). Record condition and standing liquids; c) refill points located inside bunds or on impermeable surfaces etc	200 drums of bituminous paints—used and unused, approximately 15-20. Stored on ground surface to the west of the disused fuel filling point Possible below ground tank associated with disused fuel point (pump island)
Vehicle servicing or refuelling onsite - locations, tanks and inspection pits etc	Disused fuelling point/pump island located alongside the southern perimeter of the site
Waste generated/stored onsite - Adequate storage and security/fly tipping	Very large area of stockpiled soils located in the north-eastern section of the site. Material being dampened down during visit, likely associated with the National Grid site. Disused tarry paint and tyres located along the southern perimeter adjacent to the disused fuel point and scrapyard. No containment measures in place
Surface water - On-site or nearby standing water	None observed
Site drainage – location/evidence of flooding	Surface drains running along the road through the site. No evidence of flooding
Evidence of previous site investigations e.g. trial pits, borehole covers	None observed
Evidence of land contamination - discoloured ground, seepage of liquids, strong odours	Evidence of localised oil spillage on the ground along southern edge of the site
Communications with on-site personnel	None
Summary of potential contamination sources	Southern edge of the site: Disused fuel point Scrapyard Cement depot Area of storage for empty/full oil drums, tarry paint also noted
Further comments	None

Table 63: Review of ground investigations for areas located within the study area

Local authority area	Description of report (phase 1, phase 2, validation/ remediation etc.)	Report date	Name of originator	Address of area	Type of scheme, e.g. residential/ commercial development	Planning application reference number
Royal Borough of Kensington and Chelsea	Soil conditions and contamination section from an Environmental Statement chapter, included review of previous investigations, laboratory results and previous remediation	2006	EnvironUK Ltd	Former Kensal Gasworks site, Canal Way W10 5AZ	Provision of 790 residential units	PP/06/01619
London Borough of Hammersmith and Fulham	Phases 1 and 2 Geotechnical Report - Envirocheck report, borehole, window, probing records, geotechnical and contamination analysis	25 November 2008	Terramech	Units 19-22 Mitre Bridge Industrial Park, Mitre Way, W10 6AU	Reconstruction of two industrial units in an area where previous units have been demolished	2010/02257/DE T
London Borough of Hammersmith and Fulham	Validation report - Duty of Care Validation report, includes construction methodology, soil testing and waste transfer notes	27 August 2005	McLaren Construction Ltd	Kern House, 149 Scrubs Lane	Redevelopment comprising the erection of a four-storey building of 7,080 sq. metres for use as a self-storage facility with ancillary offices, provision of five ancillary car parking spaces, two ancillary bicycle parking spaces and landscaping; relocation of existing substation building	2006/00651/DE T
London Borough of Hammersmith and Fulham	Cross London Rail Links, Geotechnical and Contaminated Land Desk Study Report	October 2006	Scott Wilson	Old Oak Common	Crossrail development	----- --
London Borough of Hammersmith and Fulham	Old Oak Common Rolling Stock, Maintenance Depot, Site Remediation Strategy	August 2011	Cross London Rail Links	Old Oak Common	Crossrail development	----- --

Local authority area	Description of report (phase 1, phase 2, validation/ remediation etc.)	Report date	Name of originator	Address of area	Type of scheme, e.g. residential/ commercial development	Planning application reference number
London Borough of Brent	Geoenvironmental site investigation report - Boreholes, window samples, trial pit records	23 April 2010	Manhire Associates Consulting Engineers	Land next to 35 Chamberlayne Road	Construction of multi-storey residential block of flats with basement	10/1070
London Borough of Brent	Tier 2 Environment Assessment Report	August 2003	Arcadis	Chamberlayne Road Service Station	As above	10/1070
London Borough of Brent	Contaminated land assessment - Borehole records, lab testing results	2005	AP Geotechnics	Salisbury Road, land adjacent to Queens Park railway station	Phase 1 of a mixed-use development - one 26-storey, one 18-storey, one five-storey and one three-storey building comprising 128 residential flats; commercial/retail and office-use floor space over ground, first and second floors; municipal car-parking and servicing in the basement	05/1317
London Borough of Brent	UXO phase 1 and buried utilities - Preliminary risk assessment	September 2010	6 Alpha Associates Ltd	Denmark Road	Demolition of Bond House, Hicks Bolton House, 1-2 Denmark Road and Wood House and redevelopment to provide 64 affordable residential units (13 of one-bedroom, 26 of two bedroom, 17 of three-bedroom and 8 of four-bedroom) and one retail unit (use class A1) within three, four, five and six storey buildings with private and communal amenity space, play space, on street parking, landscaping, a public open space and temporary open	11/0371

Local authority area	Description of report (phase 1, phase 2, validation/ remediation etc.)	Report date	Name of originator	Address of area	Type of scheme, e.g. residential/ commercial development	Planning application reference number
					space	
London Borough of Brent	Phase 1 Desktop assessment	October 2010	WSP Environmental Ltd	Denmark Road	As above	11/0371
London Borough of Brent	Phase 2 - Borehole records, chemical and geotechnical testing results, waste characterisation and outline remedial strategy	October 2010	WSP Environmental Ltd	Denmark Road	As above	11/0371
London Borough of Brent	Phase 1 Desktop assessment	August 2010	WSP Environmental Ltd	Chichester Road	Demolition of Cambridge Court, Wells Court and Ely Court and redevelopment to provide 144 residential units (86 market units - 32 one-bed, 41 two-bed, 10 three-bed and 3 four bed and 58 affordable units - 16 one-bed, 22 two-bed, 10 three-bed and 10 four-bed) in three, four and five storey buildings. Development includes the stopping up of existing access road and the formation of a new access road from Chichester Road, alterations to car parking, open space, relocation of existing play space adjacent to Kilburn Park underground station, new vehicular and pedestrian routes through the site and provision of private and communal	10/3247

Local authority area	Description of report (phase 1, phase 2, validation/ remediation etc.)	Report date	Name of originator	Address of area	Type of scheme, e.g. residential/ commercial development	Planning application reference number
					gardens	
London Borough of Brent	Phase 2 - Borehole records, chemical and geotechnical testing results, waste characterisation	September 2010	WSP Environmental Ltd	Chichester Road	As above	10/3247
London Borough of Brent	Phase 1 Desktop assessment	April 2007	SLR Consulting Ltd	182 Carlton Vale	Erection of a part six- and part eight-storey building, comprising 50 self-contained affordable flats (15 x 1-bedroom, 19 x 2-bedroom, 12 x 3-bedroom, 4 x 4-bedroom) with 25 basement car-parking spaces and bicycle storage and associated landscaping on site of former Texaco petrol station and garages	10/1841
London Borough of Brent	Land Quality Statement	August 2010	Campbell Reith Consulting Engineers	182 Carlton Vale	As above	10/1841

5 Geological sites of special scientific interest and local geological sites

5.1.1 There are no geo-conservation resources identified within the study area.

6 Mining and minerals data

- 6.1.1 There are no mining or mineral extraction sites within the study area. There are no minerals safeguarding areas or planned extraction sites indicated to be present within the study area by the minerals planning authority.

7 References

Defra and Environment Agency, (2002), *Potential contaminants for the assessment of land- R&D Publication*, Bristol, Environment Agency.

Environmental Protection Act 1990, Part IIA, Introduced in England on 1 April 2000, London, Her Majesty's Stationary Office.